

**CLAIMS**

What is claimed is:

1. A method of charging a battery, comprising the steps of:  
receiving an input power supply signal;  
5 monitoring the input power supply signal to determine when the  
input power supply signal reaches first and second predetermined thresholds;  
and  
in response to said monitoring step, selectively controlling a  
charging switch that controls the flow of the input power supply signal to the  
10 battery, wherein said controlling step comprises activating the switch when  
the input power supply signal reaches the first predetermined threshold and  
deactivating the switch when the input power supply signal reaches the  
second predetermined threshold.
- 15 2. The method according to claim 1, wherein said method is  
practiced in an electronic device that is powered by the battery and that  
includes a capacitor for maintaining a voltage to indicate that the electronic  
device is being charged, wherein practicing said method in the electronic  
device reduces the minimum value of the capacitor as compared to the  
20 minimum value required of a second capacitor that is used to provide voltage  
to the battery when the input power supply signal drops below the second  
predetermined threshold.

3. The method according to claim 1, further comprising the step of synchronizing with said controlling of the charging switch the control of a second switch that regulates current flow to a circuit such that the second switch to the circuit is activated when the charging switch is activated and  
5 deactivated when the charging switch is deactivated.

4. The method according to claim 3, wherein the circuit is a backlighting circuit.

10 5. The method according to claim 1, further comprising the step of performing said receiving, monitoring and controlling steps in a wireless charging system.

6. The method according to claim 1, further comprising the step of  
15 rectifying the input power supply signal.

7. The method according to claim 1, wherein the magnitude of the second predetermined threshold is higher than the magnitude of the first predetermined threshold.

8. A method of charging a battery, comprising the steps of:
- receiving an input power supply signal in an electronic device  
having a capacitor for maintaining a voltage to indicate that the electronic  
5 device is being charged;
- monitoring the input power supply signal to determine when the  
input power supply signal reaches first and second predetermined thresholds;
- selectively controlling a charging switch that controls the flow of  
the input power supply signal to the battery, wherein said controlling step  
10 comprises activating the switch when the input power supply signal reaches  
the first predetermined threshold and deactivating the switch when the input  
power supply signal reaches the second predetermined threshold, wherein  
practicing said monitoring and controlling steps reduces the minimum value of  
the capacitor as compared to the minimum value required of a second  
15 capacitor that is used to provide voltage to the battery when the input power  
supply signal drops below the second predetermined threshold.

9. A charging system for charging a battery, comprising:  
a coil for receiving an input power supply signal;  
a charging switch for controlling the flow of said input power  
5 supply signal to said battery; and  
a controller, wherein said controller is programmed to:  
monitor said input power supply signal to determine when  
said input power supply signal reaches first and second predetermined  
thresholds; and  
10 in response to the monitoring process, selectively control  
said charging switch by activating said charging switch when said input power  
supply signal reaches said first predetermined threshold and by deactivating  
said switch when said input power supply signal reaches said second  
predetermined threshold.
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10. The charging system according to claim 9, further comprising a  
capacitor that maintains a voltage that said controller monitors to determine  
that said battery is being charged, wherein said controller controlling said  
charging switch reduces the minimum value of said capacitor as compared to  
20 the minimum value required of a second capacitor that is used to provide  
voltage to said battery when said input power supply signal drops below said  
second predetermined threshold.

11. The charging system according to claim 9, further comprising a circuit and a second switch that regulates current flow to said circuit, said second switch being under the control of said controller, wherein said controller is further programmed to synchronize with the controlling of said charging switch the control of said second switch such that said controller  
5 activates said second switch when said charging switch is activated and disables said second switch when said charging switch is deactivated.

12. The method according to claim 11, wherein said circuit is a  
10 backlighting circuit.

13. The charging system according to claim 9, wherein said charging system is a wireless charging system.

14. The charging system according to claim 9, further comprising a  
15 rectifier, wherein said rectifier rectifies said input power supply signal.

15. The charging system according to claim 9, wherein the magnitude of said second predetermined threshold is higher than the  
20 magnitude of said first predetermined threshold.